

WHAT IS CLAIMED IS:

1 1. A hair-removal method comprising:
2 determining the diameter typical of the hair to be removed from a patient;
3 selecting a laser-pulse duration for a hair removal device according to this
4 diameter of the hair so that smaller diameter hair results in a shorter laser-pulse duration
5 than larger diameter hair; and
6 applying laser energy through a window of the hair removal device of the
7 selected laser-pulse duration to a patient's skin to cause thermal injury to hair tissue.

1 2. The method according to claim 1 further comprising the step of
2 selecting a chosen one of a laser-pulse amplitude and a laser-pulse fluence prior to the
3 applying step.

1 3. The method according to claim 1 wherein the laser energy applying
2 step is carried out by:
3 positioning a cooling element of the hair removal device against a first
4 target area on the patient's skin;
5 moving, after a chosen cooling period of time, the cooling element from
6 the first target area to a second target area with the window overlying and spaced-apart
7 from the first target area;
8 applying the laser energy to the first target area through the window with
9 the window overlying and spaced-apart from the first target area.

1 4. The method according to claim 3 further comprising moving, after
2 the laser energy applying step, the window to overlay the second target area while
3 positioning a second cooling surface against the first target area.

1 5. The method according to claim 3 wherein the moving step is
2 carried out with the chosen cooling period of time being about 0.25 to two seconds.

1 6. The method according to claim 3 further comprising the step of
2 selecting a hair removal device using laser energy in the 800 to 1200nm average length
3 range.

1 7. The method according to claim 1 further comprising the step of
2 selecting a hair removal device using laser energy having a wavelength of about 1.06
3 microns.

1 8. The method according to claim 1 wherein the selecting step is
2 carried out so that hair diameters from about 25 to 150 micrometers result in laser-pulse
3 durations of about 5 to 50 milliseconds.

1 9. A method for preparing to apply hair tissue-damaging radiation to a
2 target site on a patient's skin comprising:

3 accessing a hair removal device having a skin cooling surface and a
4 radiation source with a window through which hair tissue-damaging radiation passes, the
5 skin cooling surface and the window aligned along a direction of motion;

6 selecting a chosen one of :

7 (i) a first chosen time interval (C) for cooling the target site; and

8 (ii) a second chosen time interval (Z) between applications of hair
9 tissue-damaging radiation; and

10 determining the other of the first and second time intervals based on the
11 following:

12 $Y = (X \cdot C) / Z$, where

13 X and Y are the respective lengths of the cooling surface and the
14 window measured in the direction of motion.

1 10. The method according to claim 9 further comprising applying laser
2 energy through a beam size-defining lens system to control the lateral size of the radiation
3 beam passing through the window.